Workshop Report
2024 ASMS Conference, Anaheim, CA

Method Validation – From Real World to the Classroom
(Organized by the Forensics and Homeland Security Interest Group)

Wednesday, June 5th, 5:45 pm-7:00 pm

Coordinators: J. Tyler Davidson (Chair 2024) and Ryan Bain (Chair 2025)

Panel: **Dr. Ryan Bain** (Bureau of Alcohol, Tobacco, Firearms and Explosives)
Dr. Briana Capistran (National Institute of Standards and Technology)
Dr. Frances Scott (National Institute of Justice)
Dr. J. Tyler Davidson (Sam Houston State University)

Initial/Final Attendance: 47/49
Audience Composition: federal agencies, industry, practitioners, academia

Dr. J. Tyler Davidson started the workshop with brief opening remarks, including an introduction to the workshop topic and a quick background on each panelist. The focus of this year's workshop was method validation. The panelists explored examples of real-world method validation challenges within forensics and homeland security applications, as well as research and educational efforts to address the challenges of real-world method validation. Each presenter provided a brief (~10-minute) presentation followed by a combined group Q&A session.

Dr. Ryan Bain of the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) was the first panelist. He spoke about a recent challenging casework sample that required the characterization of oligomeric 2-butanone peroxide species. These samples presented challenging gas-phase and solution-phase rearrangement products by electrospray ionization-tandem mass spectrometry that required extensive characterization as part of the validation of the analytical method.

Dr. Briana Capistran of the National Institute of Standards and Technology (NIST) was the second panelist. She provided an update on recent efforts at NIST to aid the forensics and homeland security communities with validation resources. Specifically, she spoke about the validation of a rapid gas chromatography-mass spectrometry (GC-MS) method for forensic seized drug and ignitable liquid screening. She shared a portion of the study results and a QR code to access the developed validation template.

Dr. Frances Scott of the National Institute of Justice (NIJ) was the third panelist. She provided an overview of NIJ's mission and described NIJ's research and development process. In particular, she highlighted the ongoing work of the NIJ Technology Working Group to bring forensic practitioner research needs to the attention of the research community. Finally, she discussed several examples of NIJ-funded research projects that address the real-world forensic science challenges identified by the NIJ Technology Working Group.

Dr. J. Tyler Davidson was the final panelist. He described method validation education from an academic perspective and some of the techniques implemented by his institution to train the

next generation of scientists. The importance of research in education and the impact of internship experiences were discussed. Dr. Davidson closed the presentation with examples of educational resources and future perspectives. The panelists then hosted a ~35-minute open discussion with the audience members regarding their existing challenges with method validation, resources available for method validation guidance, and education challenges they observed in the workforce, among other topics.

Respectfully Submitted,
Dr. J. Tyler Davidson (Chair 2024) and Dr. Ryan Bain (Chair 2025)